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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,851	07/31/2003	Hirokazu Kimiya	2003_1052A	1978

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EXAMINER

AUSTIN, MELISSA J

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/630,851

Applicant(s)

KIMIYA ET AL.

Examiner

Melissa Austin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8, 9 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 10, 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 53. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application.
3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 43. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.
4. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

5. The Information Disclosure Statements (IDS) filed on 31 July and 5 December 2003 have been considered by the examiner.

Specification

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

7. The disclosure is objected to because of the following informalities: (this listing is not comprehensive)

- Pg. 1, ll. 12: insert "to" between "respond" and "the need"; space between "small" and "sealed"; ll. 15: change "demanded" to "demanding";
- Pg. 2, ll. 1: add commas (,) around "therefore"; change ",," after self-heating to a semicolon (;);
- Pg. 5, ll. 14: "temporally" does not make sense in this context (several other occurrences);
- Pg. 15, ll. 8: Table misspelled;
- Pg. 19, ll. 23: space between "that" and "controller"; ll. 24: "aits"

Appropriate correction is required.

Claim Objections

8. A series of singular dependent claims is permissible in which a dependent claim refers to a preceding claim which, in turn, refers to another preceding claim.

A claim which depends from a dependent claim should not be separated by any claim which does not also depend from said dependent claim. It should be kept in mind that a dependent claim may refer to any preceding independent claim. In general, applicant's sequence will not be changed. See MPEP § 608.01(n).

9. Claim 9 is objected to because of the following informalities: Pg. 31, ll. 10 reads, "at a temperature at most a predetermined second." Applicant should add to what "predetermined second" refers. Examiner is interpreting this to mean a predetermined second temperature following the wording of claims 2 and 3. Appropriate correction is required.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1, 3, 5, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Hall et al. (EP 0 922 637 A2). Hall teaches a battery system in which a battery is connected to a radiator for discharging heat by a heat conduction artery. A thermal switch device with a controller thermally connects/disconnects the battery and the radiator and also physically contacts them. The thermal switch is opened (applicant's breaks off thermal connection) when the battery is near its minimum desired temperature so that the battery is not excessively cooled. The reference teaches two such devices. The exemplary thermal switch is a variable conduction heat pipe in which noncondensable gas in a reservoir is heated to open the switch (that is, restrict heat conductance from the battery). The device may also be a diode heat pipe, thermal joint such as a fusible alloy, or inflation of a helium bladder (applicant's heat controller that transforms shape). As shown in Figure 4, a heat pipe (60) connects a battery (38,44) and a heat source (63A/56). (Col. 6, ll. 15 – Col. 7, ll. 50).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hall et al. (EP 0 922 637 A2). Hall teaches the limitations of claim 1 as discussed in the above 35 U.S.C. 102 rejection, incorporated herein. Hall teaches that the switch/controller establishes thermal connection between the

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radiator and battery (Col. 6, ll. 15 – Col. 7, ll. 50); however, Hall does not teach that the heat controller establishes thermal connection between the radiator and the battery at a certain temperature. As discussed in the above 35 U.S.C. 102 rejection regarding claim 3, Hall does teach thermal disconnection at a given temperature. It would have been obvious to one of ordinary skill in the art at the time the invention was made to also use temperature as a condition for thermal connection of the radiator and battery because using temperature would provide a reliable control for the timing of heat dissipation from the battery since this is a known problem in the art.

Allowable Subject Matter

14. Claims 6, 7, 10, and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach:

- The heat controller establishing thermal connection by bending;
- The heat controller establishing thermal connection by expanding;
- The heat controller moving the battery;
- The heat controller moving the radiator.

16. It is noted that JP 61 08173 discloses a temperature controller for a fuel cell in which a heat sensitive bimetal that provides for heat transfer by shape change. This reference has been found not applicable to the instant claims because fuel cells are not batteries. Although fuel cells, like batteries, are electrochemical cells that convert chemical energy into electrical energy like batteries, the active materials are not an integral part of the device but are fed from an external source when power is desired. The fuel cell also has the capability of producing electrical energy as long as the active materials are fed to the electrodes, unlike a battery that ceases to produce electrical energy when the internal supply of reactant is consumed. (*Handbook of Batteries*, 1.6)

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Austin whose telephone number is (571) 272-1247. The examiner can normally be reached on Monday - Thursday, alt. Friday, 7:15 AM - 4:15 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mja

Melissa Austin
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